

**EX4420M**

Single Channel Amplifier

# **OWNER'S MANUAL**

B & K Components Ltd.

P/N 10909

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Accessories included:	Manual Power cord



## SAFETY PRECAUTIONS



### PLEASE READ BEFORE INSTALLING

- Observance of polarity is essential. Double-check connections before turning the amplifier on. The amplifier can be damaged if polarities are incorrect.
- Damage can occur to your speakers if the power rating\* of each individual driver is exceeded by the amplifier. Ensure that all the drivers in your speaker system are capable of handling not only the power being delivered by the amplifier, but the energy that is likely to be generated during strong passages.
- Turn amplifier 'off' when plugging in or unplugging input and speaker cables!!!
- When plugging in or unplugging interconnect cables running from source to preamplifier, always mute the preamplifier and rotate the preamplifier's volume control to minimum first. It is recommended that you turn the amplifier 'off' as well for this operation.
- The EX4420M is equipped with raised feet so that continuous ventilation can be maintained. They help to maintain acoustic feedback into the amplifier at a minimum. They also provide a measure of protection against scratching any surface the unit might be resting on. **Do not alter or remove them.**
- Do not stack anything on top of the amplifier (preamplifier, processor, source...etc.).
- Leave at least 2-3 inches clearance from the top of the amplifier to the next shelf, component, etc., to ensure proper ventilation.

\* If you are at all unsure of what the speaker 'ratings' are, contact your dealer.

## The EX4420M's purpose and function

The EX4420M is a compact, very efficient, single channel power amplifier. It is designed to be used in all types of audio or audio/video systems.

## Design and construction

The EX4420M utilizes high quality electronic circuitry to achieve an environment wherein a detailed, transparent, and highly musical sound can be realized. The high quality parts complement include state-of-the-art solid state devices, 1% metal film resistors, computer grade electrolytic power supply capacitors, and a high capacity toroidal transformer.

The EX4420M operates class A predriver and AB high current MOSFET power output stages. It is capable of reproducing the most demanding audio signals at rated power levels.

## Features

**Toroidal Transformers** - Efficient high current transformer for improved dynamics.

**Discrete Circuitry** - More accurate and three dimensional reproduction of source material.

**Class A Predriver** - Improves low level detail for smoother, more musical sound.

**AB MOSFET Output Stage** - For efficient and linear power delivery.

**Limited Protection** - Provides short term protection from accidental shorting of output devices and protection from thermal overload.

**Gold Plated Connectors** - Improve connections for better sound and minimized signal loss and degradation.

**1% Metal Film Resistors** - Low noise resistors for better sound and a greater degree of repeatability.

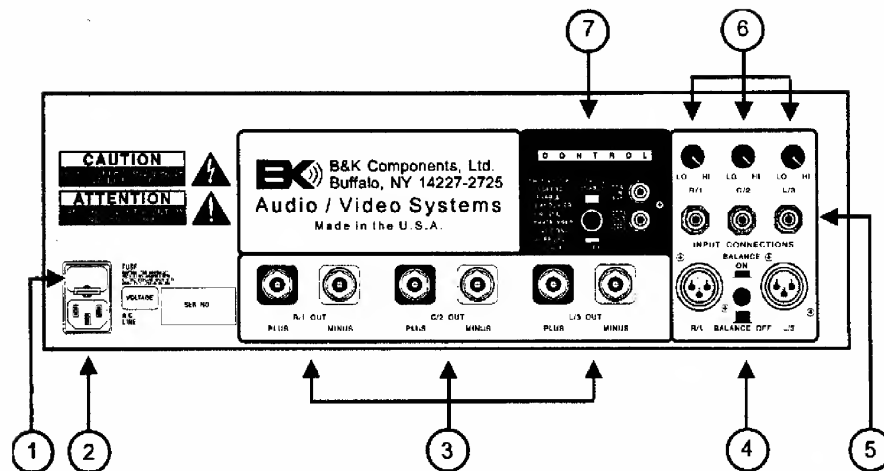
**High Current** - Ability to reproduce demanding recordings.

**Computer Grade Capacitors** - Large capacity computer grade electrolytic capacitors for extended low frequency control and improved dynamics.

# EX4420M

## Mono Channel Amplifier

### REAR PANEL VIEW



1. AC fuse holder
2. AC input receptacle
3. R,C,L channel speaker outputs
4. R,C,L balanced inputs
5. R,C,L RCA inputs
6. R,L level controls \*\*
7. Amplifier control muting input/output\*\*

**\*\* NOTE: OPTIONS NOT AVAILABLE ON THE EX4420M AMPLIFIER**  
**NOTE: THE CENTER CHANNEL IS NOT AVAILABLE ON THE EX4420M**  
**AMPLIFIER. THE EX4420M AMPLIFIER IS A SINGLE CHANNEL**  
**AMPLIFIER**

## Back panel description

**AC fuse holder** - Holds the AC Line fuse. This fuse is a 12 Amp Slow Blow fuse.

**AC Input receptacle** - For attaching the supplied AC power cord to the amplifier.

**R,L channel speaker outputs** - For connecting the speakers to the amplifier.

**R,L balanced inputs** - For connecting balanced signal patch cables (XLR).

**R,L RCA inputs** - For connecting signal patch cables (interconnects) from the preamplifier to the amplifier to pass signal.

**R,L level controls** - Not available on the EX4420M amplifier.

**Amplifier control muting input/output** - Not available on the EX4420M amplifier.

## Inputs

The EX4420M has two types of line input, unbalanced RCA's and balanced XLR connectors

**Unbalanced** - RCA type connectors accept line input from the preamplifier's unbalanced output connectors. There are two input connectors, that may be used to connect the amplifier to the preamplifier. **The left channel input is used for normal operation.**

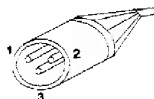
RCA cable connector -



**Operation** - For unbalanced operation, ensure the balanced switch between the balanced inputs on the rear of the amplifier is in the 'off' (out) position.

**Balanced** - XLR type connectors accept line input from the preamplifier's balanced output connectors. The EX4420M has balanced line inputs for channel 1 (R) and channel 3 (L) only.

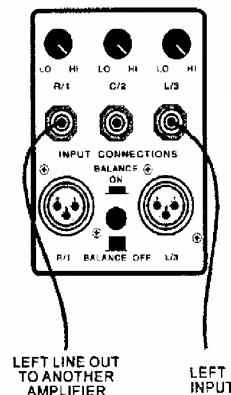
Balanced cable connector -



PIN 1 - GND  
PIN 2 - (-)  
PIN 3 - (+)

**Operation** - For balanced operation (channels 1 & 3 only), ensure the balanced switch between the balanced inputs on the rear of the amplifier is in the 'on' (in) position. **The left channel input is used for normal operation.**

The amplifier comes standard with right and left RCA inputs. The Left input is used for normal operation, but you can use the right RCA as a line output (for the same channel) to connect to another amplifier because the RCA's are connected in parallel.



## Outputs

Five way binding posts are provided. They are designed to accept a banana-type plug or spade lug connector (shown below) and are color coded for easy identification. The red (+) post should always be connected to the speakers (+) jack. The black (-) post should always be connected to the speakers (-) jack.



Spade connector    Banana jack

**The left channel output is used for normal operation.**

The amplifier comes standard with a right and left speaker output. The Left output is used for normal operation, but you can use the right output to connect to another speaker because the outputs are connected in parallel.

Figure 1





## System installation

There will most likely be a number of cables involved in the installation of your home entertainment system. Pre-planning is essential in order to maximize system efficiency. We recommend the following as a means of helping you reach that goal:

- Make a diagram of your proposed system by laying out the relative location of each component in the system. Then lay out the proposed cable runs between them. Number each cable and record its length on the diagram for future reference.
- Cable runs are critical in that they must be kept away from sources of power radiation (amplifiers, power cords, heaters, etc...). For the sake of safety, they should also be kept out of traffic areas.
- The process of optimizing the system will include the type of cable, the length of the run, and the obstructions it must deal with along its run. Your dealer can advise you on the products available and their relative merits. If building custom length audio cables is not your strength, your dealer should be able to help you with that as well.
- When possible, use a separate AC power line for the amplifier, one that is not shared by any other component in the system or any other house hold component.

*Tip: Take a piece of stout string (longer than the longest cable run) and mark it at each foot of length. Then do a mock cable run using the string, dressing it neatly along the way. Count the divisions to the next full foot, and add one foot to allow for some movement of the components. This will provide you with the ideal cable length.*

## Making the connection

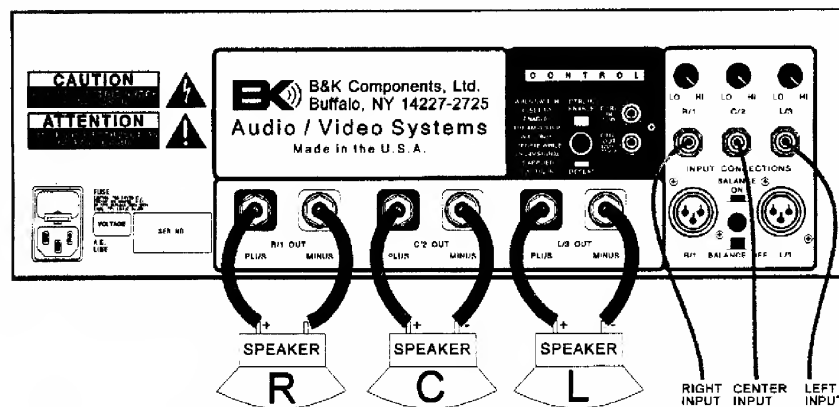
- Before doing anything, ensure that the power switch on the amplifier's front panel is in the 'off' position (rocker side in towards center of amplifier). Again, it is recommended that you locate a separate AC power outlet for the amplifier, one that is **not** shared by any other audio component in the system or any other house hold component. This will eliminate the possibility of the amplifier 'modulating' the power being supplied to the component and compromising the signal originating from that component.
- Locate the AC power cord provided with the amplifier and plug it into the power input receptacle in the rear panel. **Do not connect it to the AC power source yet!**
- Connect the audio cables from your preamplifier's output to the corresponding input connector on the amplifier. (Refer to Diagram 1)
- Connect the wires from your speakers to the appropriate (R,L,C) output on the amplifier. It is absolutely essential that you observe correct polarity in these connections. (Refer to Diagram 1)

*Example: If you connect your right front output of your preamplifier to channel 1 input on the amplifier, remember to connect your right front speaker wires to channel 1's outputs. Always observe polarity when connecting speakers, connect amplifiers (+) to the speakers (+) and amplifiers (-) to speakers (-).*

- Double check all connections.
- Plug the amplifier's power cord into the AC power source. Turn the amplifier's power switch 'on'. The panel light should be illuminated. Leave the preamplifier turned off. Before proceeding to the next step turn the amplifier off and wait 30 seconds for the amplifier to discharge. Both the preamplifier and amplifier should be off.
- Connect a playback unit (CD, VLD, Tuner, etc...) to the preamplifier. Turn the volume on the preamplifier to minimum. Turn on the preamplifier, then the amplifier (in that order). Set source on the preamplifier to the playback unit you've just connected. Turn volume up slowly and music should be heard from all channels. If this is not the case, double check your installation.
- Should you encounter any problems that cannot be traced to the source or the material being played, consult the "TROUBLESHOOTING" section on page 12.

*Note: When turning equipment 'off', the amplifier should always be turned off **first**, then the preamplifier. When turning equipment 'on', the preamplifier should always be turned on **first**, then the amplifier. Before turning anything on, ensure the preamplifier is at a low volume level.*

Diagram 1



## EX4420M SPECIFICATIONS

Power rating: 8 ohms 4 ohms	200 watts @ 1KHz 400 watts @ 1KHz
Frequency response	1 Hz - 45 KHz
Input sensitivity	1.65 Volts
THD (S+N)	0.09 % @ 1 KHz
Input impedance	33.2 Kohms
Damping factor	750
Current (peak to peak)	150 Amps
Slew rate	14V/ $\mu$ sec
Dynamic headroom	1.4 dB
S/N (A-weighted)	95 dB
Voltage gain	28
Line voltage	120/220/240 VAC switchable
Dimensions (O.A.)	17"(w) X 15.5"(d) X 5.75"(h)
Weight	36 lb (16.3 Kg)
Power consumption	350 watts max 4.0 Amps max current draw 85 watts @ no input
Replacement fuses	Line - 12 A Slow Blow Rails - 6 A Slow Blow

## Troubleshooting

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
No sound (‘on’ LED not illuminated)	<ol style="list-style-type: none"> <li>1. Power cord not plugged in.</li> <li>2. Power off at AC source.</li> <li>3. AC power inlet fuse blown or faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconnect power cord.</li> <li>2. Check AC switch or fuse.</li> <li>3. Check for shorts or overloading.</li> </ol>
No sound on some or all selected channels (‘on’ LED illuminated)	<ol style="list-style-type: none"> <li>1. Speaker leads loose or faulty.</li> <li>2. Line stage to amp. cables loose or faulty.</li> <li>3. Source to line stage cables loose or faulty.</li> <li>4. Line stage or source not correctly selected.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten, repair, or replace cable</li> <li>2. Tighten, repair or replace cable</li> <li>3. Tighten, repair or replace cable</li> <li>4. Check all switch settings.</li> </ol>
Sound lacks direction, bass weak	<ol style="list-style-type: none"> <li>1. Speakers connected out of phase.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check connections making sure that cables are connected (+) to (+) and (-) to (-).</li> </ol>
Loud hum or buzz on one or more channels	<ol style="list-style-type: none"> <li>1. Poor ground connection in interconnect cables.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check all connectors and repair as necessary.</li> </ol>
Low output from amplifier	<ol style="list-style-type: none"> <li>1. Balanced switch in balanced mode when using unbalanced inputs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Put balanced switch in correct position.</li> </ol>
Channel sounds distorted and low in output	<ol style="list-style-type: none"> <li>1. Blown rail fuse.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace blown rail fuse inside amplifier.</li> </ol>

**\*\* Note:** If unit continues to blow power inlet fuses, **DO NOT USE A HEAVIER FUSE!!**, have it serviced.

## Limited Warranty

B&K Components Ltd., referred to herein as B&K, warrants your B&K equipment against all defects in material and workmanship for a period of five years from the date of purchase. This warranty applies only to the original purchaser and only to equipment in normal residential use and service. Defective equipment must be returned to B&K, prepaid, accompanied by sufficient payment to cover the cost of return shipping and handling, and will be repaired or replaced at the discretion of B&K whose decision as to the method of repair will be final.

This warranty shall not apply to any equipment which is found to have been improperly installed, incorrectly fused, misused, abused, or subjected to harmful elements, used in any way not in accordance with instructions supplied with the unit, or to have been modified, repaired or altered in any way without the expressed, written consent of B&K. This warranty does not apply to the cabinet, the remote controller, or appearance items such as the faceplate, control buttons, or display lenses, nor does it cover any expenses incurred in shipping the unit to and from the manufacturer's service depot.

No warranty, implied or otherwise created by State law shall extend beyond the terms of this warranty and B&K shall not be liable for any incidental or consequential damage arising out of a defect in material or workmanship of the unit during the terms of this warranty or thereafter. Some States do not allow the exclusion or limitation of incidental or consequential damages and the foregoing exclusions may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from State to State.

No agent, representative, dealer or employee of B&K has the authority to increase or alter the obligations or terms of this warranty.

**B&K Components Ltd.**

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## RETURNING EQUIPMENT

No equipment may be returned to B&K Components Ltd. Without a RETURN AUTHORIZATION. Should you find it necessary to return equipment to B&K, for any reason, a RETURN AUTHORIZATION (RA) number must be issued by B&K in respect of the equipment being returned. You may request an RA number by calling B&K at the numbers below. We ask that you provide the following information at that time.

1. Your name, address, and phone number.
2. The model and serial number of the equipment being returned.
3. A description of the problem being experienced.

Your call will be referred to a Technical Service Representative who will work with you to resolve the problem. If it is determined that the unit must be returned for repair, an RA number will be issued.

Customer service hours are 10:00am to 12:00pm and 1:00pm to 4:00pm EST.

**B&K Components Ltd.** 2100 Old Union Road, Buffalo New York 14227  
1-800-543-5252 or 1-716-656-0023

B&K Components, Ltd.  
2100 Old Union Road  
Buffalo, New York 14227  
716-656-0023

*LIST YOUR UNIT INFORMATION HERE*

*MODEL #* \_\_\_\_\_

*SERIAL #* \_\_\_\_\_

*DEALER NAME* \_\_\_\_\_

*DEALER PHONE #* \_\_\_\_\_

*SALES PERSON* \_\_\_\_\_

*DATE PURCHASED* \_\_\_\_\_